Company Southeastern Land CTC
Facility Two Branch Surface ourses

## P & A Engineers & Consultants, Inc.

312 Justice Avenue Logan, WV 25601 Phone (304) 752-8320 Fax (304) 752-7488

March 28, 2017



Mr. William F. Durham, Director Division of Air Quality 601 57<sup>th</sup> Street SE Charleston, WV 25304

RE: Southeastern Land, LLC

Coal Crushing/Screening Facility ID: Pending

Dear Mr. Durham:

On behalf of Southeastern Land, LLC, we submit the enclosed General Permit Registration for the above-referenced facility. Included is a check in the amount of \$1,500.00, which represents the submittal fee.

The application addresses the construction and operation of a coal crushing and screening plant facility to be located on the Twin Branch Surface Mine in Mingo County.

If additional information or clarification is needed, please contact me at the Logan address listed above or call 304-752-8320.

Sincerely,

Donna J. Toler**∜** 

Air Quality Project Manager

donnatoler@suddenlink.net

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## WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION DIVISION OF AIR QUALITY 601 57<sup>TH</sup> Street SE

Charleston, WV 25304

Phone: (304) 926-0475 • www.wvdep.org

PLEASE CHECK ALL THAT APPLY (IF KNOWN):

CONSTRUCTION MODIFICATION RELOCATION
ADMINISTRATIVE UPDATE AFTER-THE-FACT

## APPLICATION FOR GENERAL PERMIT REGISTRATION

CONSTRUCT, MODIFY, RELOCATE OR ADMINISTRATIVELY UPDATE A STATIONARY SOURCE OF AIR POLLUTANTS

FOR AGENCY USE ONLY: PLANT I.D. #

PERMIT # \_\_\_\_\_ PERMIT WRITER: \_\_\_\_\_

G10-C – Coal Preparation and Handling	9. DAQ PLANT I.D. NO. (FOR AN EXISTING FACILITY ONLY):				
☐ G20-B – Hot Mix Asphalt	PENDING				
☐ G30-B – Natural Gas Compressor Stations					
☐ G40-B - Nonmetallic Minerals Processing					
☐ G50-B – Concrete Batch					
SECTION I. GENER.	AL INFORMATION				
1. NAME OF APPLICANT (AS REGISTERED WITH THE WV SECRETARY OF ST	ATE'S OFFICE): 2. FEDERAL EMPLOYER ID NO. (FEIN):				
SOUTHEASTERN LAND, LLC					
	I				
	26-1118578				
3. APPLICANT'S MAILING ADDRESS:	26-1118578				
3. APPLICANT'S MAILING ADDRESS:					
3. APPLICANT'S MAILING ADDRESS:	TUCK, WV 25685				
3. APPLICANT'S MAILING ADDRESS: PO BOX 9, NAUGA	TUCK, WV 25685				
3. APPLICANT'S MAILING ADDRESS: PO BOX 9, NAUGA	TUCK, WV 25685				
3. APPLICANT'S MAILING ADDRESS:  PO BOX 9, NAUGA  5. IF APPLICANT IS A SUBSIDIARY CORPORATION, PLEASE PROVIDE  6. WV BUSINESS REGISTRATION. IS THE APPLICANT A RESIDENT OF	TUCK, WV 25685  THE NAME OF PARENT CORPORATION:				
3. APPLICANT'S MAILING ADDRESS:  PO BOX 9, NAUGA  5. IF APPLICANT IS A SUBSIDIARY CORPORATION, PLEASE PROVIDE  6. WV BUSINESS REGISTRATION. IS THE APPLICANT A RESIDENT OF  IF YES, PROVIDE A COPY OF THE CERTIFICATE OF	TUCK, WV 25685  THE NAME OF PARENT CORPORATION:  THE STATE OF WEST VIRGINIA? YES DO NO INCORPORATION / ORGANIZATION / LIMITED PARTNERSHIP (ONE				
3. APPLICANT'S MAILING ADDRESS:  PO BOX 9, NAUGA  5. IF APPLICANT IS A SUBSIDIARY CORPORATION, PLEASE PROVIDE  6. WV BUSINESS REGISTRATION. IS THE APPLICANT A RESIDENT OF IF YES, PROVIDE A COPY OF THE CERTIFICATE OF PAGE) INCLUDING ANY NAME CHANGE AMENDME  IF NO, PROVIDE A COPY OF THE CERTIFICATE OF A	TUCK, WV 25685  THE NAME OF PARENT CORPORATION:  THE STATE OF WEST VIRGINIA? YES DO				

#### SECTION II. FACILITY INFORMATION

7. TYPE OF PLANT OR FACILITY (STATIONARY SOURCE) TO BE CONSTRUCTED,		8. STANDARD IND THE FACILITY:	DUSTRIAL CLASSIFICATION (SIC) CODE FOR		
MODIFIED, RELOCATED OR ADMINISTRATIVELY UPDATED (E.G., COAL PREPARATION PLANT, PRIMARY CRUSHER, ETC.):			1222		
Construction and operation of					
crushing/screening plant					
9A. DAQ PLANT I.D. NO. (FOR AN EXISTING FACILITY:			SR30 (TITLE V) PERMIT NUMBERS KISTING FACILITY ONLY):		
Pending					
	PRIMARY OPERATING SI	TE INFORMATION			
11A. NAME OF PRIMARY OPERATING SITE:	12A. MAILING ADDRESS	OF PRIMARY OPER	ATING SITE:		
Twin Branch Surface Mine	Twin Branch Surface Mine Same				
13A. DOES THE APPLICANT OWN, LEASE, HAVE YES D NO	/E AN OPTION TO BUY, OF	R OTHERWISE HAVE	E CONTROL OF THE PROPOSED SITE?		
⇒ IF YES, PLEASE EXPLAIN: OWNER A	ND OPERATOR				
	ERMIT FOR THIS SOURCE.				
14A. ➡ FOR MODIFICATIONS or ADMINISTRA PRESENT LOCATION OF THE FACIL			LEASE PROVIDE DIRECTIONS TO THE		
	CATION PERMITS, PLEASI	· ·	IONS TO THE PROPOSED NEW SITE		
LOCATION FROM THE NEAREST ST	ATE ROAD.				
From Charleston, take 119S pa	st Fountain Place M	iall in Logan –	proceed on US119S		
approximately 12 miles – mine ent	rance is located on	Twin Branch F	Road before the Route 65 exit.		
INCLUDE A MAP AS ATTACHMENT F.	404 004 1174				
15A. NEAREST CITY OR TOWN:  Lenore	16A. COUNTY:	©. <b>8</b> 1 €			
2011010	Mingo				
17A. UTM NORTHING (KM):	18A. UTM EASTING (KM):		19A. UTM ZONE:		
4185.69584	397.93510 17				

LAT/LONG FOR PLANT: 37-48-46.6472 AND 82-09-34.3691

#### 1<sup>ST</sup> ALTERNATE OPERATING SITE INFORMATION

11B. NAME OF PRIMARY OPERATING SITE:	12B. MAILING ADDRESS OF PRIMARY OPERATING SITE:				
N/A					
13B. DOES THE APPLICANT OWN, LEASE, HAV	VE AN OPTION TO BUY, OR OTHERWISE HAVI	E CONTROL OF THE PROPOSED SITE?			
□ IF YES, PLEASE EXPLAIN:  □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □					
□ IF NO, YOU ARE NOT ELIGIBLE FOR A PER	ERMIT FOR THIS SOURCE.				
14B. ➡ FOR MODIFICATIONS or ADMINISTRA PRESENT LOCATION OF THE FACIL	ATIVE UPDATES, AT AN EXISTING FACILITY, F ITY FROM THE NEAREST STATE ROAD;	PLEASE PROVIDE DIRECTIONS TO THE			
FOR CONSTRUCTION OR RELC LOCATION FROM THE NEAREST ST	OCATION PERMITS, PLEASE PROVIDE DIRECT PATE ROAD.	TIONS TO THE PROPOSED NEW SITE			
INCLUDE A MAP AS ATTACHMENT F.					
15B. NEAREST CITY OR TOWN:	16B. COUNTY:				
17B. UTM NORTHING (KM):	18B. UTM EASTING (KM):	19B. UTM ZONE:			

#### 2<sup>ND</sup> ALTERNATE OPERATING SITE INFORMATION

11C. NAME OF PRIMARY OPERATING SITE: N/A	E: 12C. MAILING ADDRESS OF PRIMARY OPERATING SITE:					
13C. DOES THE APPLICANT OWN, LEASE, HAVE AN OPTION TO BUY, OR OTHERWISE HAVE CONTROL OF THE PROPOSED SITE?  □ YES □ NO □ IF YES, PLEASE EXPLAIN: □ SOURCE						
□ IF NO, YOU ARE NOT ELIGIBLE FOR A PERMIT FOR THIS SOURCE.  14C. □ FOR MODIFICATIONS or ADMINISTRATIVE UPDATES, AT AN EXISTING FACILITY, PLEASE PROVIDE DIRECTIONS TO THE PRESENT LOCATION OF THE FACILITY FROM THE NEAREST STATE ROAD;  □ FOR CONSTRUCTION OR RELOCATION PERMITS, PLEASE PROVIDE DIRECTIONS TO THE PROPOSED NEW SITE LOCATION FROM THE NEAREST STATE ROAD.  INCLUDE A MAP AS ATTACHMENT F.						
15C. NEAREST CITY OR TOWN:	16C. COUNTY:					
17C. UTM NORTHING (KM):	18C. UTM EASTING (KM):	19C. UTM	I ZONE:			
20. PROVIDE THE DATE OF ANTICIPATED INSTALLATION OR CHANGE: Upon permit approval  \$\text{START- UP IF REGISTRATION IS GRANTED:}\$  THE DATE UPON WHICH THE PROPOSED CHANGE DID HAPPEN:/  Upon permit approval  21. DATE OF ANTICIPATED START- UP IF REGISTRATION IS GRANTED:  Upon permit approval						
22. PROVIDE MAXIMUM PROJECTED OPERATING SCHEDULE OF ACTIVITY/ ACTIVITIES OUTLINED IN THIS APPLICATION:  HOURS PER DAY 8 DAYS PER WEEK 5 WEEKS PER YEAR 50 PERCENTAGE OF OPERATION 100%						

# WEST VIRGINIA STATE TAX DEPARTMENT BUSINESS REGISTRATION CERTIFICATE

ISSUED TO:
SOUTHEASTERN LAND, LLC
1441 RIVER FRONT RD
LOVELY, KY 41231-8983

BUSINESS REGISTRATION ACCOUNT NUMBER:

2333-9404

This certificate is issued on:

07/5/2016

This certificate is issued by the West Virginia State Tax Commissioner in accordance with Chapter 11, Article 12, of the West Virginia Code

The person or organization identified on this certificate is registered to conduct business in the State of West Virginia at the location above.

This certificate is not transferrable and must be displayed at the location for which issued This certificate shall be permanent until cessation of the business for which the certificate of registration was granted or until it is suspended, revoked or cancelled by the Tax Commissioner.

Change in name or change of location shall be considered a cessation of the business and a new certificate shall be required.

TRAVELING/STREET VENDORS: Must carry a copy of this certificate in every vehicle operated by them. CONTRACTORS, DRILLING OPERATORS, TIMBER/LOGGING OPERATIONS: Must have a copy of this certificate displayed at every job site within West Virginia.

atL006 v.4 L0742485824

#### DETAILED PROCESS DESCRIPTION

The Twin Branch Surface Mine is located in a remote area of Mingo County, WV. Coal will be crushed at the pit by the Detroit Diesel 3-53, stockpiled, and screened thru the Chieftain 1700 DD Screen.

The coal will be pit-cleaned and fed by front-end loader to bin BS-01(PW) @ TP-01(UD-PW) which is a 3 yard bin and used for transfer purposes only; BS-01 will transfer to fully enclosed crusher w/water CR-01(FW) @ TP-02(TC-PW); to belt conveyor BC-01(NC) @ TP-03(TC-FW); to stockpile OS-01(SW-WS) @ TP-04(TC-MDH). Coal will then transfer from OS-01 @ TP-05(UD-PW) or directly from the coal pit @ TP-06(UD-PW) to 10 ton bin BS-02(PW). Bin BS-02 will transfer to the screen feed conveyor BC-02(NC) @ TP-07(TC-PE); to screen SS-01(PW) @ TP-08(TC-FE). Screen material will then be sent to any one of four belt conveyors BC-03(NC), BC-04(NC), BC-05(NC), or BC-06(NC) for transfer to the stockpiles OS-02(SW-WS), OS-03(SW-WS), OS-04(SW-WS) and OS-05(SW-WS) @ TP-09(TC-PE) thru TP-20(UD-PW). Stockpiles will then be loaded to truck for delivery. Oversize Stockpile OS-05 will be loaded backed to bin BS-01 by front-end loader for reprocessing.

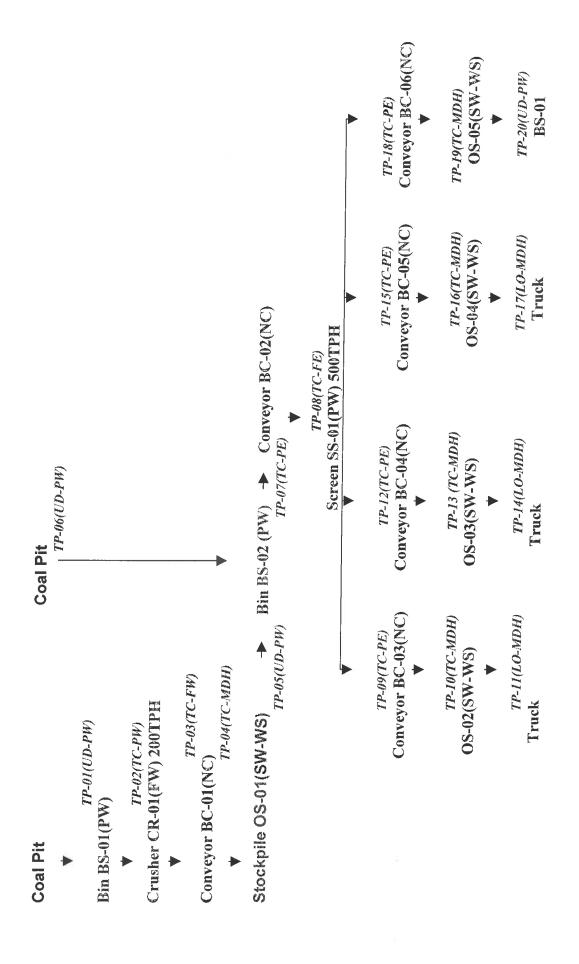
The crusher feed bin will be used for coal transfer only and not storage, therefore, water sprays are not required but necessary as determined by this writer.

#### **DESCRIPTION OF FUGITIVE EMISSIONS**

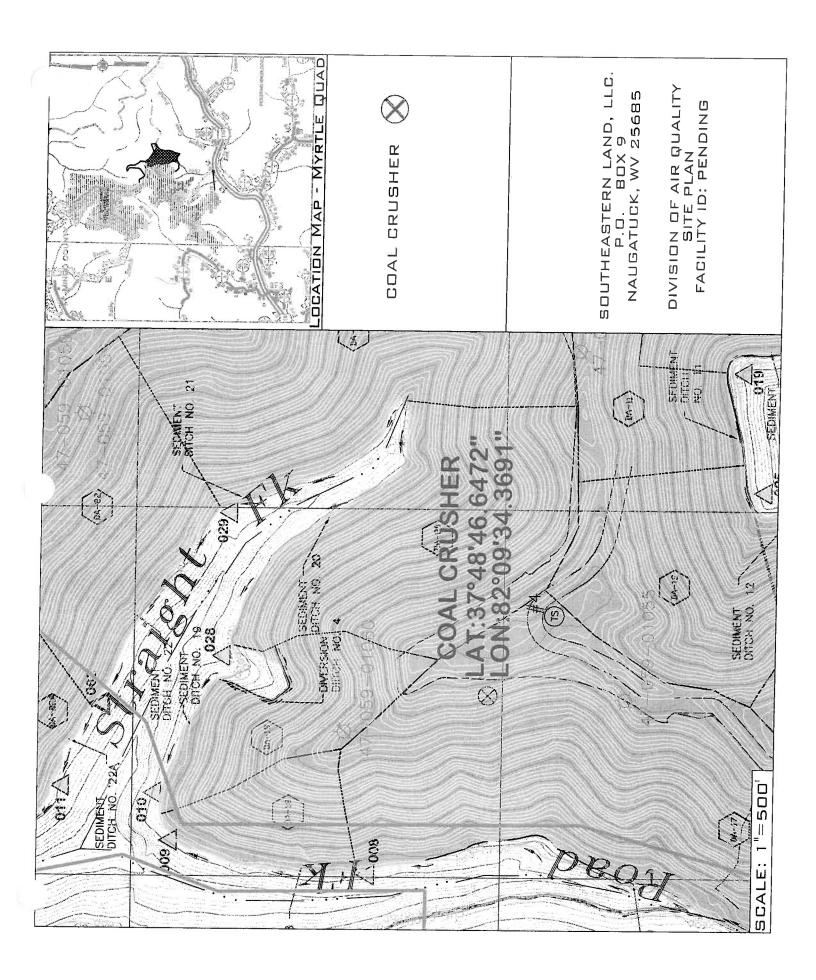
Potential sources of fugitive particulate emissions for this facility include emissions, which are not captured by pollution control equipment and emissions from open stockpiles and vehicular traffic on unpaved haulroads and work areas. The haulroads and work areas will be controlled by water truck in accordance with section E.6.c.i. of the General Permit. The stockpile areas will be controlled by water truck with pressurized pumps sufficient to control emissions. The water truck will be operated three times daily, and more as needed in dry periods.

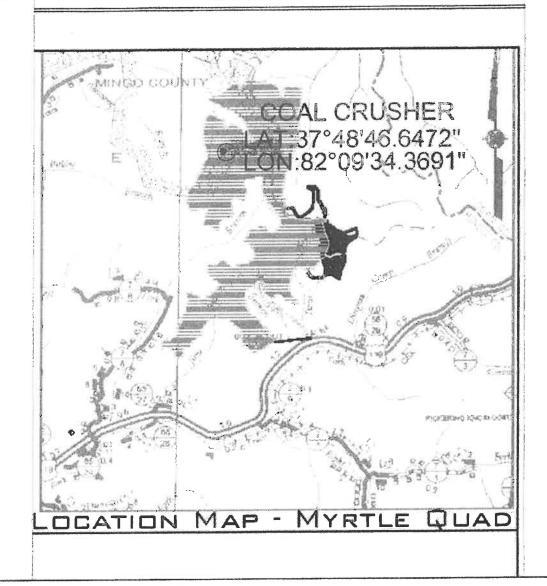
An additive to prevent freezing will be utilized in the winter months when freezing conditions are present. New course rock base material will be added to unpaved haulroads as needed.

## SOUTHEASTERN LAND, LLC MATERIAL FLOW DIAGRAM – TWIN BRANCH COAL CRUSHING/SCREENING PLANT



Facility ID Pending Submittal March 2017



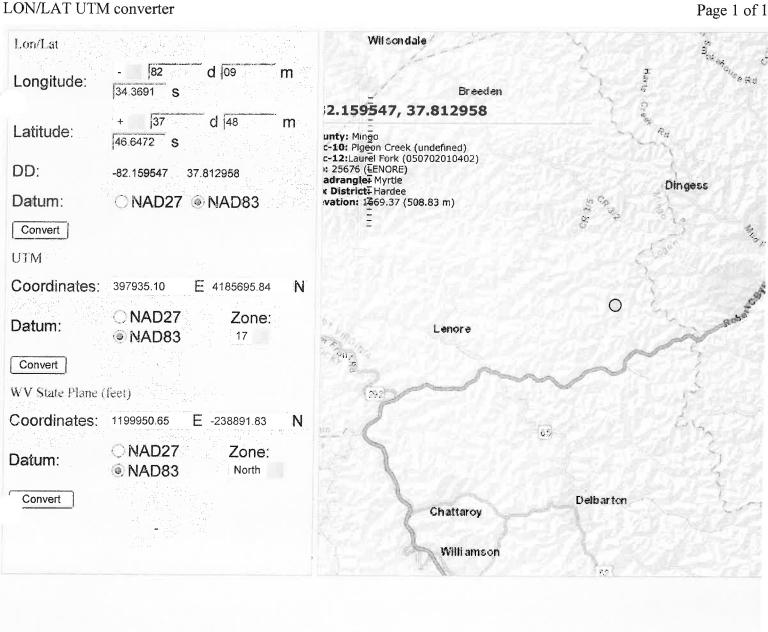


#### NPDES PERMIT WV1020722

WV DEPT. OF HIGHWAYS
HARDEE AND HARVEY DISTRICT
OF MINGO COUNTY, WV
NEAREST P.O. HOLDEN
MYRTLE (NO. 500) QUADRANGLE

#### RECEIVING STREAMS:

TWIN BRANCH, LITTLE TWIN BRANCH, JIMS BRANCH, RIFFE BRANCH, ALL OF TRACE FORK OF PIGEON CREEK, & UNNAMED TRIBUTARIES OF LAUREL FORK, LAUREL FORK, ROAD FORK, STRAIGHT FORK, STURGELL FORK OF RIGHT FORK OF LAUREL FORK ALL OF PIGEON CREEK OF THE TUG RIVER.



#### CRUSHING AFFECTED SOURCE SHEET

Source Iden	itification Number <sup>1</sup>	CR-01		,	
Type of Cr	Type of Crusher or Screen <sup>2</sup>				
Date of	Manufacture <sup>3</sup>	1977			
Maximum	tons/hour	200			
Throughput <sup>4</sup>	tons/year	720,000			
Material	sized from/to:5	6x0			
Average Moi	sture Content (%) <sup>6</sup>	5			
Control De	vice ID Number <sup>7</sup>	FW			
	height (ft)	N/A	,		
	diameter (ft)				
	volume (ACFM)				
Baghouse Stack	exit temp (°F)				
Parameters <sup>8</sup>	UTM Coordinates				
	hours/day	12			
Maximum Operating	days/year	300			
Operating Schedule <sup>9</sup>	hours/year	3600			
	January-March	25			
	April-June	25			
Percentage of	July-September	25			
Operation <sup>10</sup>	Oct-December	25			

1. Enter the appropriate Source Identification Number for each crusher and screen. For example, in the case of an operation which incorporates multiple crushers, the crushers should be designated CR-1, CR-2, CR-3 etc. beginning with the breaker or primary crusher. Multiple screens should be designated S-1, S-2, S-3 etc.

2. Describe types of crushers and screens using the following codes:

HM	Hammermill	SS	Stationary Screen
DR	Double Roll Crusher	SD	Single Deck Screen
BM	Ball Mill	DD	Double-Deck Screen
RB	Rotary Breaker	TD	Triple Deck Screen
JC	Jaw Crusher	OT	Other
GC	Gyratory Crusher		

- OT Other Quadroll
  3. Enter the date that each crusher and screen was manufactured.
- 4. Enter the maximum throughput for each crusher and screen in tons per hour and tons per year.
- 5. Describe the nominal material size reduction (e.g. +2"/ -\_").
- 6. Enter the average percent moisture content of the material processed.
- Enter the appropriate Control Device Identification Number for each crusher and screen. Refer to Table A Control Device
   Listing and Control Device Identification Number Instructions in the Reference Document for Control Device ID prefixes and numbering.
- 8. Enter the appropriate stack parameters if a baghouse control device is used.
- 9. Enter the maximum operating schedule for each crusher and screen in hours per day, days per year and hours per year.
- 10. Enter the estimated percentage of operation throughout the year for each crusher and screen.

#### **CRUSHING AFFECTED SOURCE SHEET**

Source Identification Number <sup>1</sup>		SS-01			
Type of Cr	Type of Crusher or Screen <sup>2</sup>				
Date of	Manufacture <sup>3</sup>	2015			
Maximum	tons/hour	500			
Throughput⁴	tons/year	1,800,000		į	
Material	sized from/to:5	4x0			
Average Moi	isture Content (%) <sup>6</sup>	5			
Control De	vice ID Number <sup>7</sup>	PW			
	height (ft)	N/A			
	diameter (ft)				
	volume (ACFM)				
Baghouse Stack	exit temp (°F)				
Parameters <sup>8</sup>	UTM Coordinates				
	hours/day	12			
Maximum Operating	days/year	300			
Operating Schedule	hours/year	3600			
	January-March	25			
	April-June	25			
Percentage of	July-September	25			
Operation <sup>10</sup>	Oct-December	25			

1. Enter the appropriate Source Identification Number for each crusher and screen. For example, in the case of an operation which incorporates multiple crushers, the crushers should be designated CR-1, CR-2, CR-3 etc. beginning with the breaker or primary crusher. Multiple screens should be designated S-1, S-2, S-3 etc.

2. Describe types of crushers and screens using the following codes:

НМ	Hammermill	SS	Stationary Screen
DR	Double Roll Crusher	SD	Single Deck Screen
BM	Ball Mill	DD	Double-Deck Screen
RB	Rotary Breaker	TD	Triple Deck Screen
JC	Jaw Crusher	OT	Other
GC	Gyratory Crusher		

OT Other - Quadroll
3. Enter the date that each crusher and screen was manufactured.

4. Enter the maximum throughput for each crusher and screen in tons per hour and tons per year.

5. Describe the nominal material size reduction (e.g. +2"/ -\_").

- 6. Enter the average percent moisture content of the material processed.
- 7. Enter the appropriate Control Device Identification Number for each crusher and screen. Refer to Table A Control Device Listing and Control Device Identification Number Instructions in the Reference Document for Control Device ID prefixes and numbering.

8. Enter the appropriate stack parameters if a baghouse control device is used.

9. Enter the maximum operating schedule for each crusher and screen in hours per day, days per year and hours per year.

10. Enter the estimated percentage of operation throughout the year for each crusher and screen.

#### **CONVEYING AFFECTED SOURCE SHEET**

		Type of	Size of		n Material er Rate <sup>5</sup>	Average Moisture	Control
Source ID Number <sup>1</sup>	Date of Manufacture <sup>2</sup>	Material Handled <sup>3</sup>	Material Handled <sup>4</sup>	tons/hour	tons/year	Content (%) <sup>6</sup>	Device 7
BC-01	1977	Coal	6x0	200	720,000	5	NC
BC-02 feed	2015	Coal	4x0	500	1,800,000	5	NC
BC-03 side	2015	Coal	+2X0	500	1,800,000	5	NC
BC-04 side	2015	Coal	-2x0	500	1,800,000	5	NC
BC-05 product	2015	Coal	2x0	500	1,800,000	5	NC
BC-06 Oversize	2015	Coal	4x0	500	1,800,000	5	NC
							,

Pag	е	of
ıay	C	O1

#### STORAGE ACTIVITY AFFECTED SOURCE SHEET

Source Identification Number <sup>1</sup>	BS-01	BS-02		
Type of Material Stored <sup>2</sup>	Coal	Coal		
Average Moisture Content (%) <sup>3</sup>	5	5		
Maximum Yearly Storage Throughput (tons) <sup>4</sup>	720,000	1,800,000		
Maximum Storage Capacity (tons) <sup>5</sup>	3 yards (4ton)	10 tons		
Maximum Base Area (ft²) <sup>6</sup>				
Maximum Pile Height (ft) <sup>7</sup>				
Method of Material Load-in <sup>8</sup>	FE	FW		
Load-in Control Device Identification Number <sup>9</sup>	UD-PE	UD-PW		
Storage Control Device Identification Number <sup>9</sup>	Not used for storage – transfer only	SW-PW		
Method of Material Load-out <sup>8</sup>	ss	SS		
Load-out Control Device Identification Number <sup>9</sup>	TC-FE	TC-FE		

Enter the appropriate Source Identification Number for each storage activity using the following codes. For example, if the facility utilizes three storage bins, four open stockpiles and one storage building (full enclosure), the Source Identification Numbers should be BS-1, BS-2, and BS-3; OS-1, OS-2, OS-3, and OS-4; and SB-1, respectively.

BS Bin or Storage Silo (full enclosure) Enclosure (three sided enclosure)

os Open Stockpile

Storage Building (full enclosure) SB

Stockpiles with wind fences

Other

- Describe the type of material stored or stockpiled (e.g. clean coal, raw coal, refuse, etc).
- Enter the average percent moisture content of the stored material.
- Enter the maximum yearly storage throughput for each storage activity.
- 5. Enter the maximum storage capacity for each storage activity in tons (e.g. silo capacity, maximum stockpile size, etc.)
- For stockpiles, enter the maximum stockpile base area.
- For stockpiles, enter the maximum stockpile height. 7.
- Enter the method of load-in or load-out to/from stockpiles or bins using the following codes:

CS Clamshell Fixed Height Chute from Bins Stationary Conveyor/Stacker

FC

ST Stacking Tube

Front Endloader

Telescoping Chute from Bins TC

MC Mobile Conveyor/Stacker

Truck Dump TD

Under-pile or Under-Bin Reclaim Conveyor

Pneumatic Conveyor/Stacker PC

RC Rake or Bucket Reclaim Conveyor OT Other

#### STORAGE ACTIVITY AFFECTED SOURCE SHEET

Source Identification Number <sup>1</sup>	OS-01	OS-02	OS-03	OS-04	OS-05
Type of Material Stored <sup>2</sup>	Coal	Coal	Coal	Coal	Coal
Average Moisture Content (%) <sup>3</sup>	5	5	5	5	5
Maximum Yearly Storage Throughput (tons) <sup>4</sup>	720,000	1,800,000	1,800,000	1,800,000	1,800,000
Maximum Storage Capacity (tons) <sup>5</sup>	5,000	5,000	5,000	5,000	5,000
Maximum Base Area (ft²) <sup>6</sup>	8,869	8,869	8,869	8,869	8,869
Maximum Pile Height (ft) <sup>7</sup>	20'	20'	20'	20'	20'
Method of Material Load-in <sup>8</sup>	SS	SS	SS	SS	SS
Load-in Control Device Identification Number <sup>9</sup>	TC-MDH	TC-MDH	TC-MDH	TC-MDH	TC-MDH
Storage Control Device Identification Number <sup>9</sup>	SW-WS	SW-WS	SW-WS	SW-WS	SW-WS
Method of Material Load-out <sup>8</sup>	EndLoader FE	EndLoader FE	EndLoader FE	EndLoader FE	EndLoader FE
Load-out Control Device Identification Number <sup>9</sup>	LO-MDH	LO-MDH	LO-MDH	LO-MDH	LO-MDH

<sup>1.</sup> Enter the appropriate Source Identification Number for each storage activity using the following codes. For example, if the facility utilizes three storage bins, four open stockpiles and one storage building (full enclosure), the Source Identification Numbers should be BS-1, BS-2, and BS-3; OS-1, OS-2, OS-3, and OS-4; and SB-1, respectively.

BS Bin or Storage Silo (full enclosure)

OS Open Stockpile

SF Stockpiles with wind fences

E3 Enclosure (three sided enclosure)

SB Storage Building (full enclosure)

OT Other - Pressurized Water Truck

- Describe the type of material stored or stockpiled (e.g. clean coal, raw coal, refuse, etc).
- 3. Enter the average percent moisture content of the stored material.
- 4. Enter the maximum yearly storage throughput for each storage activity.
- 5. Enter the maximum storage capacity for each storage activity in tons (e.g. silo capacity, maximum stockpile size, etc.)
- For stockpiles, enter the maximum stockpile base area.
- 7. For stockpiles, enter the maximum stockpile height.
- 8. Enter the method of load-in or load-out to/from stockpiles or bins using the following codes:

CS Clamshell

FC Fixed Height Chute from Bins

FE Front Endloader

MC Mobile Conveyor/Stacker

UC Under-pile or Under-Bin Reclaim Conveyor

RC Rake or Bucket Reclaim Conveyor

SS Stationary Conveyor/Stacker

ST Stacking Tube

TC Telescoping Chute from Bins

TD Truck Dump

PC Pneumatic Conveyor/Stacker

OT Other

## BAGHOUSE AIR POLLUTION CONTROL DEVICE SHEET **Not applicable for this facility**

Complete a Baghouse Air Pollution Control Device Sheet for each baghouse control device.

1.	Baghouse Control Device Identification Number:
2.	Manufacturer's name and model identification:
3.	Number of compartments in baghouse:
4.	Number of compartments online during normal operation and conditions:
5.	Gas flow rate into baghouse: ACFM @ °F and PSIA
6.	Total cloth area: ft <sup>2</sup>
7.	Operating air to cloth ratio: ft/min
8.	Filter media type:
9.	Stabilized static pressure drop across baghouse: inches H <sub>2</sub> O
10.	Baghouse operation is:
	☐ Continuous ☐ Automatic ☐ Intermittent
11.	Method used to clean bags:
	□ Shaker □ Pulse jet □ Reverse jet □ Other
12.	Emission rate of particulate matter entering and exiting baghouse at maximum design operating conditions:
	Entering baghouse: lb/hr and grains/ACF
	Exiting baghouse: lb/hr and grains/ACF
13.	Guaranteed minimum baghouse collection efficiency: %
14.	Provide a written description of the capture system (e.g. hooding and ductwork arrangement), size of ductwork and hoods and air volume, capacity and operating horsepower of fan:
15.	Describe the method of disposal for the collected material:

INPUT:	S							Page 1
		on for each emission source and		Name of ap			heastern Land	_
transfer	point as list	ed in the permit application.		Name of pla	ant:		Branch Plant	_
						Based o	on 3600 hours	
1. CRUSI		SCREENING (including all primary and s	secondary o	rushers and	l screens)			
	Primary		Maximu	ım Material	Control	Control	1	
	Crusher	Description		ng Capacity	Device	Efficiency		
	ID Number		TPH	IPY	ID Number	%		
	CR-01	Detroit Diesel 3-53	200	720,000	FW	90		
		Detroit Dieser 0-00						
			1	<u> </u>				
Į.		DARY AND TERTIARY CRUSHING			<u> </u>		<u>.</u>	
	Secondary			m Material	Control	Control		
	& Tertiary Crusher ID	Description	Processi	ng Capacity	Device ID Number	Efficiency %		
	Crusiici ib				ID (tallion			
				T				
					-			
				-	$\vdash$			
			<u> </u>					
			<u> </u>					
	1c. SUREE	NING						
	Secondary		Maximu	m Material	Control	Control		
	& Tertiary	Description	Processin	ng Capacity	Device	Efficiency %		
ļ.	Crusher ID		IFFI	TPY	ID Number	70		
	SS-01	POwerscreen Chieftain 1700	500	1,800,000	PW	80	Based on 3600 hrs	
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#### 2. TRANSFER POINTS (including all conveyor transfer points, equipment transfer points etc.)

			1 141	1 147 70
ı	k =	Particle Size Multiplier (dimensionless)	0.74	0.35
ı	U =	Mean Wind Speed (mph)	7	

Transfer	Transfer Point Description	Material	1	Maximum	Control	Contr
Point ID No.	Include ID Numbers of all conveyors,	Moisture	TPH Tr	ansfer Rate	Device	Efficie
ID No.	crushers, screens, stockpiles, etc. involved	Content %	IPH	TPY	ID Number	%
ΓP01	Coal Pit to Bin BS-01	5	200	720,000	UD-PW	80
TP02	BS-01 to CR-01	5	200	720,000	TC-FW	90
TP03	CR-01 TO BC-01	5	200	720,000	TC-FW	90
TP04	BC-01 to OS-01	5	200	720,000	TC-MDH	0
P05	OS-01 to BS-02	5	200	720,000	UD-PW	80
FP06	Coal Pit to BS-02	5	500	1,800,000	UD-PW	80
P07	BS-02 to BC-02	5	500	1,800,000	TC-PE	50
P08	BC-02 to SS-01	5	500			80
P09	SS-01 to BC-03	5		1,800,000	TC-FE	
P10			500	1,800,000	TC-PE	50
	BC-03 to OS-02	5	500	1,800,000	TC-MDH	0
P11	OS-02 to Truck	5	500	1,800,000	LO-MDH	0
P12	SS-01 to BC-04	5	500	1,800,000	TC-PE	50
P13	BC-04 to OS-03	5	500	1,800,000	TC-MDH	0
P14	OS-03 to Truck	5	500	1,800,000	LO-MDH	0
P15	SS-01 to BC-05	5	500	1,800,000	TC-PE	50
P16	BC-05 to OS-04	5	500	1,800,000	TC-MDH	0
P17	OS-04 to Truck	5	500	1,800,000	LO-MDH	0
P18	SS-01 to BC-06	5	500	1,800,000	TC-PE	50
	BC-06 to OS-05	5	500	1,800,000	TC-MDH	0
P20	OS-05 to back to BS-01	5	500	1,800,000	UD-PW	80
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#### 3. WIND EROSION OF STOCKPILES (including all stockpiles of raw coal, clean coal, coal refuse, etc.)

p =	number of days per year with precipitation >0.01 inch	157
f =	percentage of time that the unobstructed wind speed	20
	exceeds 12 mph at the mean pile height	

Source	Stockpile	Silt	Stockpile	Control	Control
ID No.	Description	Content of	base area	Device	Efficiency
		Material %	Max. sqft	ID Number	%
OS-01	Coal	5	8,869	SW-WS	75
OS-02	Coal	5	8,869	SW-WS	75
OS-03	Coal	5	8,869	SW-WS	75
OS-04	Coal	5	8,869	SW-WS	75
OS-05	Coal	5	8,869	SW-WS	75

#### 4. UNPAVED HAULROADS (including all equipment traffic involved in process, haul trucks, endloaders, etc.)

s =	silt content of road surface material (%)	9
p =	number of days per year with precipitation >0.01 inch	157
M <sub>dry</sub> =	surface material moisture content (%) - dry conditions	0.2

		Number	Mean	Mean	Miles	Maximum	Maximum	Control	Control
Item	Description	of	Vehicle	Vehicle	per	Trips Per	Trips Per	Device	Efficiency
Number		wheels	Weight(tons)	Speed (mph)	Trip	Hour	Year	ID Number	%
	-								
1	Trucks out OS-02 1,800,000	18	30	15	2	16.6	60,000	HR-WS	70
2	Trucks out OS-03 1,800,000	18	30	15	2	16.6	60,000	HR-WS	70
3	Trucks out OS-04 1,800,000	18	30	15	2	16.6	60,000	HR-WS	70
4									
5	Endloaders 1,800,000	2	20	5	0.01	25	90,000	HR-WS	70
6									
7	based on 3600 hours								
8									

#### 5. INDUSTRIAL PAVED HAULROADS (including all equipment traffic involved in process, haul trucks, endloaders, etc.)

sL =	road surface silt loading, (g/ft^2)	1
P =	number of days per year with precipitation >0.01 inch	157

Item Number	Description	Mean Vehicle Weight (tons)	Miles per Trip	Maximum Trips Per Hour	Maximum Trips Per Year	Control Device ID Number	Control Efficiency %
1							
2							
3							
4							
5	· · · · · · · · · · · · · · · · · · ·						
6							
7							
8							

#### **EMISSIONS SUMMARY**

Name of applicant: Name of plant: Southeastern Land
Twin Branch Plant

#### Particulate Matter or PM (for 45CSR14 Major Source Determination)

	Uncon	trolled PM	Controlled PM			
L	lb/hr	TPY	lb/hr	TPY		

FUGITIVE EMISSIONS							
Stockpile Emissions	0.28	1.24	0.07	0.31			
Unpaved Haulroad Emissions	1,126.95	2,036.64	338.09	610.99			
Paved Haulroad Emissions	0.00	0.00	0.00	0.00			
Fugitive Emissions Total	1,127.24	2,037.89	338.16	611.30			

	POINT SC	URCE EMISSIONS		
Equipment Emissions	54.00	97.20	10.40	18.72
Transfer Point Emissions	8.64	15.56	5.46	9.83
Point Source Emissions Total*	62.64	112.76	15.86	28.55

Facility Emissions Total	1,189.88	2,150.64	354.02	639.85

*Facility Potential to Emit	(PTE)	(Baseline Emissions)	=	28.55
(Based on Point Source Total controlled P	M TPY emiss	ions from above)	ENTER ON LINE 26 O	F APPLICATION

#### Particulate Matter under 10 microns, or PM-10 (for 45CSR30 Major Source Determination)

	Uncont	rolled PM-10	Conti	rolled PM-10
	lb/hr	TPY	lb/hr	TPY
1	FUGITI\	/E EMISSIONS		

Stockpile Emissions	0.13	0.58	0.03	0.15
Unpaved Haulroad Emissions	325.70	588.60	97.71	176.58
Paved Haulroad Emissions	0.00	0.00	0.00	0.00

	POINT SO	URCE EMISSIONS		
Equipment Emissions	25.38	45.68	4.89	8.80
Transfer Point Emissions	4.09	7.36	2.58	4.65
Point Source Emissions Total*	29.47	53.04	7.47	13.45

II .				
II				i II
Facility Emissions Total	355.30	642.22	105.21	400.47
Facility Emissions Total	1 333.30	042.23	105.21	i 190.17 ii
<u> </u>				

1a. Primary Crushing

Primary		P	M			PM	1-10	
Crusher	Uncor	Uncontrolled		Controlled		ntrolled	Cont	rolled
ID Number	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
					GENERAL I			
CR-01	4.000	7.200	0.400	0.720	1.880	3.384	0.188	0.338
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	4.000	7.200	0.400	0.720	1.880	3.384	0.188	0.338

1b. Secondary and Tertiary Crushing

Secondary		F	PM			PN	1-10	
& Tertiary	Uncoi	ntrolled	Cont	rolled	Unco	ntrolled	Conf	rolled
Crusher ID	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
					7	Energy III		
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
								100
TOTAL	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1c. Screening

		F	M		1	₽ħ	1-10	
Screen	Uncor	ntrolled	Cont	rolled	Uncor	ntrolied	Con	rolled
ID Number	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
SS-01	50.000	90.000	10.000	18.000	23.500	42.300	4.700	8.460
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	50.000	90.000	10.000	18.000	23.500	42,300	4.700	8.460

Crushing		Р		PM	-10			
and	Uncontrolled		Controlled		Uncor	ntrolled	Cont	rolled
Screening	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
hativusen estere							· · · · · · · · · · · · · · · · · · ·	
TOTAL	54.000	97.200	10,400	18.720	25.380	45.684	4.888	8.798

#### **EMISSION FACTORS**

source: Air Pollution Engineering Manual and References (lb/ton of material throughput)

РМ	
Primary Crushing	0.02
Tertiary Crushing	0.06
Screening	0.1

PM-10	
Primary Crushing	0.0094
Tertiary Crushing	0.0282
Screening	0.047

#### 2. Emissions From TRANSFER POINTS

Transfer		F	PM			P۱	<b>/</b> I-10	
Point	Unco	ntrolled	Controlle	ed	Unco	ntrolled	Con	trolled
ID No.	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
TP01	0.203	0.366	0.041	0.073	0.096	0.173	0.019	0.035
TP02	0.203	0.366	0.020	0.037	0.096	0.173	0.010	0.017
TP03	0.203	0.366	0.020	0.037	0.096	0.173	0.010	0.017
TP04	0.203	0.366	0.203	0.366	0.096	0.173	0.096	0.173
TP05	0.203	0.366	0.041	0.073	0.096	0.173	0.019	0.035
TP06	0.508	0.915	0.102	0.183	0.240	0.433	0.048	0.087
TP07	0.508	0.915	0.254	0.458	0.240	0.433	0.120	0.216
TP08	0.508	0.915	0.102	0.183	0.240	0.433	0.048	0.087
TP09	0.508	0.915	0.254	0.458	0.240	0.433	0.120	0.216
TP10	0.508	0.915	0.508	0.915	0.240	0.433	0.240	0.433
TP11	0.508	0.915	0.508	0.915	0.240	0.433	0.240	0.433
TP12	0.508	0.915	0.254	0.458	0.240	0.433	0.120	0.216
TP13	0.508	0.915	0.508	0.915	0.240	0.433	0.240	0.433
TP14	0.508	0.915	0.508	0.915	0.240	0.433	0.240	0.433
TP15	0.508	0.915	0.254	0.458	0.240	0.433	0.120	0.216
TP16	0.508	0.915	0.508	0.915	0.240	0.433	0.240	0.433
TP17	0.508	0.915	0.508	0.915	0.240	0.433	0.240	0.433
TP18	0.508	0.915	0.254	0.458	0.240	0.433	0.120	0.216
TP19	0.508	0.915	0.508	0.915	0.240	0.433	0.240	0.433
TP20	0.508	0.915	0.102	0.183	0.240	0.433	0.048	0.087
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
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0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
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0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
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0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
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0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

#### 2. Emissions From TRANSFER POINTS (continued)

Transfer		Р	М			PM	1-10	,
Point	Unco	ntrolled	Controll	ed	Uncor	ntrolled	Cont	trolled
ID No.	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
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0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		0.000	0.000	0.000	0.000	0.000	0.000	0.000
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<u> </u>	0.000	0.000	0.000	- 0.000	0.000	0.000	0.000	
	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	0.000	0.000	0.000 5.460	0.000	0.000	0.000	0.000	0.000
TOTALS	8.643	15.557	5.40U	9.828	4.088	7.358	2.583	4.649

#### Source:

AP42, Fifth Edition, Revised 11/2006

13.2.4 Aggregate Handling and Storage Piles

Emissions From Batch Drop

 $E = k*(0.0032) * [(U/5)^1.3]/[(M/2)^1.4] = pounds/ton$ 

Where:		PM	PM-10
k =	Particle Size Multiplier (dimensionless)	0.74	0.35
U =	Mean Wind Speed (mph)		
M =	Material Moisture Content (%)		

#### Assumptions:

#### k - Particle size multiplier

For PM (< or equal to 30um) k = 0.74For PM-10 (< or equal to 10um) k = 0.35

#### **Emission Factor**

For PM

E=

\$I\$88\*(0.0032)\*((((Inputs!\$I\$72)/5)^1.3)/(((Inputs!G78+0.000000001)/2)^1.4)

=lb/ton

For PM-10 =lb/ton E=

\$J\$88\*(0.0032)\*((((Inputs!\$1\$72)/5)^1.3)/(((Inputs!G78+0.000000001)/2)^1.4

For lb/hr

 $[lb/ton]^*[ton/hr] = [lb/hr]$ 

For Tons/year

[lb/ton]\*[ton/yr]\*[ton/2000lb] = [ton/yr]

#### 3. Emissions From WIND EROSION OF STOCKPILES

Stockpile	PM		PM-10					
ID No.	Unco	ntrolled	Cont	rolled	Unco	ntrolled	Cont	rolled
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
OS-01	0.057	0.248	0.014	0.062	0.027	0.117	0.007	0.029
OS-02	0.057	0.248	0.014	0.062	0.027	0.117	0.007	0.029
OS-03	0.057	0.248	0.014	0.062	0.027	0.117	0.007	0.029
OS-04	0.057	0.248	0.014	0.062	0.027	0.117	0.007	0.029
OS-05	0.057	0.248	0.014	0.062	0.027	0.117	0.007	0.029
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTALS	0.284	1.242	0.071	0.311	0.133	0.584	0.033	0.146

Source:

Air Pollution Engineering Manual

Storage Pile Wind Erosion (Active Storage)

E = 1.7\*[s/1.5]\*[(365-p)/235]\*[f/15] = (lb/day/acre)

#### Where:

s =	silt content of material
p =	number of days with >0.01 inch of precipitation per year
f =	percentage of time that the unobstructed wind speed
	exceeds 12 mph at the mean pile height

**Emission Factors** 

For PM

E=(1.7)\*((Inputs!F147)/1.5)\*((365-inputs!I139)/235)\*((Inputs!I140)/15)

For PM-10

E=0.47\*(1.7)\*((Inputs!F147)/1.5)\*((365-Inputs!I139)/235)\*((Inputs!I140)/15)

For lb/hr

[lb/day/acre]\*[day/24hr]\*[base area of pile (acres)] = lb/hr

For Ton/yr

[lb/day/acre]\*[365day/yr]\*[Ton/2000lb]\*[base area of pile (acres)] = Ton/yr

#### 4. Emissions From UNPAVED HAULROADS

Item	PM				PM-	-10		
No.	Uncor	ntrolled	Contr	olled	Uncor	ntrolled	Cont	rolled
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
1	374.87	677.47	112.46	203.24	108.34	195.79	32.50	58.74
2	374.87	677.47	112.46	203.24	108.34	195.79	32.50	58.74
3	374.87	677.47	112.46	203.24	108.34	195.79	32.50	58.74
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	2.35	4.23	0.71	1.27	0.68	1.22	0.20	0.37
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTALS	1126.95	2036.64	338.09	610.99	325.70	588.60	97.71	176.58

Source:

AP42, Fifth Edition, Revised 11/2006

13.2.2 Unpaved Roads

Emission Estimate For Unpaved Haulroads at Industrial Sites (equation 1)

E=

 $k*((s/12)^a)*((W/3)^b) = Ib/vmt$ 

Where:

		PM	PM-10
k =	particle size multiplier	4.90	1.50
a =	empirical constant	0.7	0.9
b =	empirical constant	0.45	0.45

**Emission Factors** 

For PM

E=

((\$I\$35)\*(((Inputs!\$I\$163)/12)^(\$I\$36))\*(((Inputs!H171)/3)^\$I\$37))

For PM-10

E=

((\$J\$35)\*(((Inputs!\$I\$163)/12)^(\$J\$36))\*(((Inputs!H171)/3)^\$J\$37))

For lb/hr

(lb/vmt)\*(miles per trip)\*(Max trips per hour)

For Ton/yr

(lb/vmt)\*(miles per trip)\*(Max trips per year)\*(1/2000)

#### 5. Emissions From INDUSTRIAL PAVED HAULROADS

Item	PM				PM	l-10		
No.	Unconf	trolled	Cont	rolled	Uncon	trolled	Cont	rolled
	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	lb/hr	TPY
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTALS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Source:

AP42, Fifth Edition, Revised 11/2006

13.2.1 PAVED ROADS

**Emission Estimate For Paved Haulroads** 

 $E = [k * (sL/2)^0.65 * (W/3)^1.5 - C] * (1 - (P/4*N) = lb / Vehicle Mile Traveled (VMT)$ 

#### Where:

		PIVI	PIVI-10
k =	particle size multiplier	0.082	0.016
sL =	road surface silt loading, (g/ft^2)	1	
P =	number of days per year with precipitation >0.01 inch	157	
N =	number of days in averaging period	365	
C=	factor for exhaust, brake wear and tire wear	0.0047	0.0047

**Emission Factors** 

E= For PM

(\$I\$34\*(((\$I\$35)/2)^0.65)\*(((Inputs!G190)/3)^1.5)-(\$I\$38))\*(1-((Inputs!\$I\$

For PM-10 E=

(\$J\$34)\*(((\$I\$35)/2)^0.65)\*(((Inputs!G190)/3)^1.5))-(\$I\$38))\*(1-((Inputs!\$

For lb/hr

(lb/vmt)\*(miles per trip)\*(Max trips per hour)

For Ton/yr

(lb/vmt)\*(miles per trip)\*(Max trips per year)\*(1/2000)

## AIR QUALITY PERMIT NOTICE Notice of Application

Notice is given that Southeastern Land, LLC has applied to the West Virginia Department of Environmental Protection, Division of Air Quality, for a General Permit Registration for a Coal Crushing and Screening Plant System to be located on Twin Branch Surface Mine, near Lenore in Mingo County, West Virginia. The facility coordinates are as follows: latitude 37.812958 and longitude -82.159547.

The applicant estimates the potential to discharge the following Regulated Air Pollutants from the diesel combustion engines will be: criteria pollutants for the engine is estimated to be: NOx 11.83 tons per year, CO 2.549 tons per year, VOC 0.943 tons per year, SOx 0.783 tons per year and PM10 0.84 tons per year. The potential to emit hazardous pollutants from the engine is estimated to be: Benzene 0.004848 tons per year, Toluene 0.002125 tons per year, Xylene 0.001481 tons per year, Acetaldehyde 0.003985 tons per year, Acrolein 0.00048 tons per year, Formaldehyde 0.006131 tons per year and Naphthalene 0.00044 tons per year.

The applicant estimates the potential to discharge the following Regulated Air Pollutants associated with the operation of the crushing/screening plant will be: facility particulate matter potential to emit baseline emissions of 29 tons per year, particulate matter less than 10 microns emissions total of 13 tons per year and particulate matter facility emissions total of 640 tons per year.

Startup of operation is planned to begin upon permit approval. Written comments will be received by the West Virginia Department of Environmental Protection, Division of Air Quality, 601 57<sup>th</sup> Street, SE, Charleston, WV 25304, for at least 30 calendar days from the date of publication of this notice.

Any questions regarding this permit application should be directed to the DAQ at (304) 926-0499, extension 1250, during normal business hours.

Dated this the 3rd day of April 2017

By: Southeastern Land, LLC Larry D. Adams Authorized Agent PO Box 9 Naugatuck, WV 25685

### **ELECTRONIC SUBMITTAL DISCS**

#### SECTION IV. CERTIFICATION OF INFORMATION

This General Permit Registration Application shall be signed below by a Responsible Official. A Responsible Official is a President, Vice President, Secretary, Treasurer, General Partner, General Manager, a member of a Board of Directors, or Owner, depending on business structure. A business may certify an Authorized Representative who shall have authority to bind the Corporation, Partnership, Limited Liability Company, Association, Joint Venture or Sole Proprietorship. Required records of daily throughput, hours of operation and maintenance, general correspondence, Emission Inventory, Certified Emission Statement, compliance certifications and all required notifications must be signed by a Responsible Official or an Authorized Representative. If a business wishes to certify an Authorized Representative, the official agreement below shall be checked off and the appropriate names and signatures entered. Any administratively incomplete or improperly signed or unsigned Registration Application will be returned to the applicant.

#### FOR A CORPORATION (domestic or foreign)

I certify that I am a President, Vice President, Secretary, Treasurer or in charge of a principal business function of the corporation

#### **FOR A PARTNERSHIP**

G I certify that I am a General Partner

#### FOR A LIMITED LIABILITY COMPANY

I certify that I am a General Partner or General Manager

#### FOR AN ASSOCIATION

I certify that I am the President or a member of the Board of Directors

#### **FOR A JOINT VENTURE**

I certify that I am the President, General Partner or General Manager

#### **FOR A SOLE PROPRIETORSHIP**

G I certify that I am the Owner and Proprietor

is an Authorized Representative and in that capacity shall represent the interest of the business (e.g., Corporation, Partnership, Limited Liability Company, Association Joint Venture or Sole Proprietorship) and may obligate and legally bind the business. If the business changes its Authorized Representative, a Responsible Official shall notify the Chief of the Office of Air Quality immediately, and/or,

I hereby certify that all information contained in this General Permit Registration Application and any supporting documents appended hereto is, to the best of my knowledge, true, accurate and complete, and that all reasonable efforts have been made to provide the most comprehensive information possible

Signature XXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	
(please use blue ink)	Responsible Official	Date
Name & Title: Larr	y D. Adams, Authorized Agent	
(please print or type)	R	1 . 3
Signature	h De -	3/9/17
(please use blue ink)	Authorized Representative (if applicable)	Date
Applicant's Name:	Southeastern Land, LLC	
Phone: 304-235-71	75(Jason Swann, contact) jason.swann@boothe	nergy.com

Email: larry.a@czarky.net



#### LIMITED POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that Southeastern Land, LLC ("Southeastern"), a Kentucky limited liability company, hereby constitutes and appoints Larry D. Adams, an employee of Matrix Energy, LLC, a Kentucky limited liability company and affiliate of Southeastern, its true and lawful attorney-in-fact and agent, with full power and authority to execute and deliver on behalf of Southeastern, all mining permit and related documentation required by the West Virginia Department of Environment Protection, or any other state or federal agency in order to participate in mining activities in State of West Virginia.

This Power of Attorney shall be effective as of its date of execution and shall remain in effect until revoked in writing. No person acting in reliance upon this power shall be charged with notice of any revocation hereof in the absence of actual knowledge of such revocation.

It is Southeastern's intention to grant to its attorney-in-fact full and complete authority to act for it and in its stead in the specific matter above described. In no event shall persons relying on this Power of Attorney be required to ascertain the authority of Southeastern's attorney-in-fact to act hereunder, and all persons dealing with said attorney-in-fact shall be entitled, in the absence of actual knowledge of revocation, to rely upon the authority of such person, and the acts of such person shall bind Southeastern and acquit persons dealing with my said attorney-in-fact to the same extent as if Southeastern had been acting in its own behalf.

IN TESTIMONY WHEREOF, witness my signature this 15 day of July, 2016

Southeastern Land, LLC

By: James H. Booth, President

STATE OF KENTUCKY ) SCT.
COUNTY OF MARTIN )

The foregoing Limited Power of Attorney was subscribed, sworn to and acknowledged before me on this the day of July, 2016, by James H. Booth, President of Southeastern Land, LLC, a Kentucky limited liability company, for and on behalf of said company

My Commission Expires:

Notary Public State at Large, Kentucky

THIS INSTRUMENT PREPARED BY:

Tiffany J. Fannin Legal Department 2408 Sir Barton Way, Suite 325 Lexington, KY 40509 CYNTHIA CLINE Notary Public State at Large Kentucky My Commission Expires Aug 18, 2017

#### SECTION III. ATTACHMENTS AND SUPPORTING DOCUMENTS

PLEASE CHECK ALL ATTACHMENTS INCLUDED WITH THIS PERMIT APPLICATION:

Please See the appropriate reference document for an explanation of the attachments listed below.

ATTACHMENT A : CURRENT BUSINESS CERTIFICATE

ATTACHMENT B: PROCESS DESCRIPTION

ATTACHMENT C: DESCRIPTION OF FUGITIVE EMISSIONS

ATTACHMENT D: PROCESS FLOW DIAGRAM

ATTACHMENT E: PLOT PLAN

ATTACHMENT F: AREA MAP

ATTACHMENT G: AFFECTED SOURCE SHEETS

ATTACHMENT H: BAGHOUSE AIR POLLUTION CONTROL DEVICE SHEET

ATTACHMENT I: EMISSIONS CALCULATIONS

ATTACHMENT J: CLASS I LEGAL ADVERTISEMENT

ATTACHMENT K: ELECTRONIC SUBMITTAL DISKETTE

CERTIFICATION OF INFORMATION

APPLICATION FEE

PLEASE MAIL AN ORIGINAL AND TWO COPIES OF THE COMPLETE GENERAL PERMIT REGISTRATION APPLICATION WITH THE SIGNATURE(S) TO THE DAQ PERMITTING SECTION AT THE ADDRESS SHOWN ON THE FRONT PAGE. PLEASE DO NOT FAX PERMIT APPLICATIONS. FOR QUESTIONS REGARDING APPLICATIONS OR WEST VIRGINIA AIR POLLUTION RULES AND REGULATIONS PLEASE CALL (304) 926-3727.

#### **ENGINE DATA SHEET**

		<del></del>	XIA DILL				
Source Ide	ntification Number <sup>1</sup>	E1 (0	Crusher)	E2 (	Screen)		
Engine Man	nufacturer and Model	Detr	oit 3-53	Chieftain	1700 CAT 4.4		
Manufactu	rer's Rated bhp/rpm	101	1/2800	111	1/2200		
Sor	urce Status <sup>2</sup>		A/F		A/F		
	d/Modified/Removed onth/Year) <sup>3</sup>	2	017	2	017		
Engine Manufactu	ured/Reconstruction Date4	1	977	2	015		
Engine according (Yes or No) <sup>5</sup>	Stationary Spark Ignition to 40CFR60 Subpart IIII?		No		Yes		
Is this a Certified Engine according t (Yes or No) <sup>6</sup>	Stationary Spark Ignition to 40CFR60 Subpart JJJJ?		No		No		
	Engine Type	2 S	troke	4 S	stroke		
	APCD Type <sup>8</sup>	N	J/A	N	J/A		
ъ.	Fuel Type <sup>9</sup>	Di	esel	Di	iesel		<u>.                                    </u>
Engine, Fuel and	H <sub>2</sub> S (gr/100 scf)	N	I/A	N	J/A		
Combustion Data	Operating bhp/rpm	1	01	111			
Data	BSFC (Btu/bhp-hr)	N	I/A	N/A			
	Fuel throughput (ft³/hr)	14 (	GPH*	7.4 GPH			
	Fuel throughput (MMft³/yr)	50,40	0 GPY	26,640 GPY			
	Operation (hrs/yr)	36	500	3600			
Reference <sup>10</sup>	Potential Emissions <sup>11</sup>	lbs/hr	tons/yr	lbs/hr	tons/yr		
	NO <sub>X</sub>	3.1310	5.636	3.4410	6.194		
	CO	0.6747	1.214	0.7415	1.335		
	VOC	0.2495	0.449	0.2742	0.494		****
	SO <sub>2</sub>	0.2071	0.373	0.2276	0.410		
	PM <sub>10</sub>	0.2222	0.400	0.2442	0.440		
	Formaldehyde	0.00223	0.004011	0.0118	0.00212	-	

BASED ON USAGE AS REPORTED BY OPERATORS

1.	Enter the appropriate Source Identification Number for each reciprocating internal combustion compressor/generator engine
	located at the facility. Multiple compressor engines should be designated CE-1, CE-2, CE-3 etc. Emergency Generator
	engines should be designated EG-1, EG-2, EG-3 etc. If more than three (3) engines exist, please use additional sheets.

2. Enter the Source Status using the following codes:

NS Construction of New Source (installation) ES **Existing Source** 

MS Modification of Existing Source RS Removal of Source

- 3. Enter the date (or anticipated date) of the engine's installation (construction of source), modification or removal.
- 4. Enter the date that the engine was manufactured, modified or reconstructed.
- 5. Is the engine a certified stationary compression ignition internal combustion engine according to 40CFR60 Subpart IIII. If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emissionrelated written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance according to 40CFR§60.4210 as appropriate.

#### Provide a manufacturer's data sheet for all engines being registered.

6. Is the engine a certified stationary spark ignition internal combustion engine according to 40CFR60 Subpart JJJJ. If so, the engine and control device must be operated and maintained in accordance with the manufacturer's emission-related written instructions. You must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required. If the certified engine is not operated and maintained in accordance with the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine and you must demonstrate compliance according to 40CFR§60.4243a(2)(i) through (iii), as appropriate.

#### Provide a manufacturer's data sheet for all engines being registered.

7. Enter the Engine Type designation(s) using the following codes:

LB2S Lean Burn Two Stroke

RB4S Rich Burn Four Stroke

LB4S Lean Burn Four Stroke

8. Enter the Air Pollution Control Device (APCD) type designation(s) using the following codes:

Air/Fuel Ratio

Ignition Retard

HEIS High Energy Ignition System

SIPC Screw-in Precombustion Chambers

Prestratified Charge

LEC Low Emission Combustion

NSCR Rich Burn & Non-Selective Catalytic Reduction

SCR Lean Burn & Selective Catalytic Reduction

9. Enter the Fuel Type using the following codes:

PQ Pipeline Quality Natural Gas

RG Raw Natural Gas

2FO #2 Fuel Oil LPG Liquid Propane Gas

10. Enter the Potential Emissions Data Reference designation using the following codes. Attach all referenced data to this Compressor/Generator Data Sheet(s).

MD Manufacturer's Data

ΑP AP-42

GR GRI-HAPCalc<sup>TM</sup> OT Other .

(please list)

11. Enter each engine's Potential to Emit (PTE) for the listed regulated pollutants in pounds per hour and tons per year, PTE shall be calculated at manufacturer's rated brake horsepower and may reflect reduction efficiencies of listed Air Pollution Control Devices. Emergency generator engines may use 500 hours of operation when calculating PTE. PTE data from this data sheet shall be incorporated in the Emissions Summary Sheet.

#### STORAGE TANK DATA SHEET

Source ID #1	Status <sup>2</sup>	Content <sup>3</sup>	Volume <sup>4</sup>	Dia <sup>5</sup>	Throughput <sup>6</sup>	Orientation <sup>7</sup>	Liquid Height <sup>8</sup>
T1	Exist	Diesel	1,000	4	8,000	HORZ	
							<del> </del>
							· · · · · · · · · · · · · · · · · · ·
				-			

- 1. Enter the appropriate Source Identification Numbers (Source ID #) for each storage tank located at the facility. Tanks should be designated T01, T02, T03, etc.
- 2. Enter storage tank Status using the following:

EXIST Existing Equipment

REM Equipment Removed

NEW Installation of New Equipment

- 3. Enter storage tank content such as condensate, pipeline liquids, glycol (DEG or TEG), lube oil, etc.
- Enter storage tank volume in gallons.
- 5. Enter storage tank diameter in feet.
- 6. Enter storage tank throughput in gallons per year.
- 7. Enter storage tank orientation using the following:

VERT Vertical Tank

8. Enter storage tank average liquid height in feet.

HORZ Horizontal Tank

SUMMARY SHEET FOR CRITERIA POLLUTANTS	Registration Number Government G10-D	missions (Ibs/hr)	(I) SHOW (MISSING)	700	2.58	4.89	0.03	97.71	+	Total 105.21 Total 190.17		0.2495 0.2071 0.2222 5.636 1.214 0.449 0.373 0.400	1335 0 404 0 410					0.5237 0.4347 105.6764 11.83 2.55 0.043
ITERI			ON.	X X								5.636	6.194					
ET FOR CR			DM	4 1410	2.58	4.89	0.03	97.71		105.21		<u> </u>	-	+				
RY SHE		(lbs/hr)	Ś	700						Total	-	0.2071	0.2276					0.4347
SUMMA		d Emissions (	VOC									0.2495	0.2742					0.5237
EMISSION SU		Potential E	00									0.6747	0.7415					1.4162
EM			NOx	:								3.1310	3.4410			-		6.572
			Source ID No.	Two free D.	I ransfer Points	Crush/Screen	Stockpiles	Haulroads				Detroit 3-53	Cat 4.4					

		EMISS	EMISSION SUMMAI	MMARY	Y SHEET	FOR H	RY SHEET FOR HAZARDOUS/TOXIC POLLUTANTS	OUS/TO	XIC POL	LUTANT	N.	
								Re	Registration Number (c		G10-D	
		Pc	Potential Emissions (1	issions (Ibs/	.bs/hr)			P	otential Emi			
Source ID No.	Benzene	Acetaldeh yde	Toluene	Xylenes	Acrolein	Naphthale ne	Benzene	Acetaldehyd	Toluene	y and A		Naphthalen
Transfe r Points										Salar	ACI OLEIII	u
Crush												
Stockpil es												
Haul												
Detroit 3-53	0.00176	0.00145	0.00077	0.00054	0.00017	0.00016	0.003172	0.002607	0.000139	0960000	0 000317	996000
Cat 4.4	0.00093	0.00077	0.00041	0.00028			0.001676	0.001378	0.000735	0.000512	0.000166	0.000152
TOTAL	HAPS 0.0	HAPS 0.01094 lb/hr	0.01960	0.019696 TPV								
				7 77 77								

## SOUTHEASTERN LAND, LLC COAL CRUSHING/SCREENING PLANT ID No. PENDING DETROIT DIESEL 3-53

#### TERIA POLLUTANTS

AP-42 5th Edition Section 3.3 Gasoline and Diesel Industrial Engines (10/96) - Table 3.3-1 for Diesel Fuel

		75	kW	
	Detroit Diesel Fuel Engine	101	hp	
Max. Hours of Operation (8 hrs/day,	, 5 days/week, 50 weeks/year)	3600	hrs/year	
	Heating Value for diesel	19300	Btu/gal	
		14	GPH	(According to operators

E (hourly) = Emission Factor (lb/hp-hr) \* Horse Power (hp)
E (annual) = Emission Factor (lb/hp-hr) \* Horse Power (hp) \* Maximum Hours of Operation \* 1 ton
per 2000 lb

Pollutant		Emission Factor (lb/hp-hr)	Emission Factor (lb/MMBtu)	Rating	lb/hour	TPY
NOx	AP42	0.03100	4.41	D	3.1310	5.636
CO	AP42	0.00668	0.95	D	0.6747	1.214
SOx	AP42	0.00205	0.29	D	0.2071	0.373
PM/PM10	AP42	0.00220	0.31	D	0.2222	0.400
VOC	AP42	0.00247	0.35	D	0.2495	0.449

#### HAZARDOUS AIR POLLUTANTS

42 5th Edition Section 3.3 Gasoline and Diesel Industrial Engines (10/96) - Table 3.3-2 40CSR30 Table 45-30A Hazardous Air Pollutants

		Detroit Diesel Fuel Engine 101 hp
hours/year	3600	ximum Hours of Operation (10hrs/day, 6 days/week, 50 weeks/year)
Btu/Ib	19300	cation, based on EPA WebFIRE/AP-42 3.4-1 assumptions on diesel
lb/gal	7.1	
BTU/US gal	134900	Heating Value for diesel
gal/hour (based on known usad	14	Maximum diesel usage at 2800 rpm

E (hourly) = Emission Factor (lb/hp-hr) \* Horse Power (hp) E (annual) = Emission Factor (lb/hp-hr) \* Horse Power (hp) \* Maximum Hours of Operation \* 1 ton per 2000 lb

		Emission Factor			
CAS NO		(lb/MMBtu)	Rating	lb/hour	TPY
71-43-2	Benzene	0.000933	Ε	0.00176	0.003172
108-88-3	Toluene	0.000409	Ε	0.00077	0.00139
	Xylenes	0.000285	E	0.00054	0.000969
	1,3-Butadiene	0.0000391	E	7.4E-05	0.000133
50-00-0	Formaldehyde	0.00118	E	0.00223	0.004011
	Acetaldehyde	0.000767	E	0.00145	0.002607
	Acrolein	0.0000925	E	0.00017	0.000314
91-20-3	Naphthalene	0.0000848	Е	0.00016	0.000288

Burning diesel fuel: Total HAPs 0.00716 0.012885

> lb/hour **TPY**

## SOUTHEASTERN LAND, LLC COAL SCREENING PLANT

## ID No. PENDING POWER SCREEN CHIEFTAIN 1700

#### TERIA POLLUTANTS

AP-42 5th Edition Section 3.3 Gasoline and Diesel Industrial Engines (10/96) - Table 3.3-1 for Diesel Fuel

	83	kW
Caterpillar C4.4 Diesel Fuel Engine	111	hp
Max. Hours of Operation (8 hrs/day, 5 days/week, 50 weeks/year)	3600	hrs/year
Heating Value for diesel	19300	Btu/gal
	7.4	GPH

E (hourly) = Emission Factor (lb/hp-hr) \* Horse Power (hp)
E (annual) = Emission Factor (lb/hp-hr) \* Horse Power (hp) \* Maximum Hours of Operation \* 1 ton
per 2000 lb

Pollutant		Emission Factor (lb/hp-hr)	Emission Factor (lb/MMBtu)	Rating	lb/hour	TPY
NOx	AP42	0.03100	4.41	D	3.4410	6.194
CO	AP42	0.00668	0.95	D	0.7415	1.335
SOx	AP42	0.00205	0.29	D	0.2276	0.410
PM/PM10	AP42	0.00220	0.31	D	0.2442	0.440
VOC	AP42	0.00247	0.35	D	0.2742	0.494

#### **HAZARDOUS AIR POLLUTANTS**

42 5th Edition Section 3.3 Gasoline and Diesel Industrial Engines (10/96) - Table 3.3-2 45CSR30 Table 45-30A Hazardous Air Pollutants

Caterpillar C4.4 Diesel Fuel Engine 111 hp		
ximum Hours of Operation (10hrs/day, 6 days/week, 50 weeks/year)	3600	hours/year
cation, based on EPA WebFIRE/AP-42 3.4-1 assumptions on diesel	19300	Btu/lb
	7.1	lb/gal
Heating Value for diesel	134900	BTU/US gal
Maximum diesel usage at 2200 rpm	7.4	gal/hour based on kw

E (hourly) = Emission Factor (lb/hp-hr) \* Horse Power (hp)
E (annual) = Emission Factor (lb/hp-hr) \* Horse Power (hp) \* Maximum Hours of Operation \* 1 ton
per 2000 lb

		Emission Factor			
CAS NO.		(lb/MMBtu)	Rating	lb/hour	TPY
71-43-2	Benzene	0.000933	Ε	0.00093	0.001676
108-88-3	Toluene	0.000409	Ε	0.00041	0.000735
	Xylenes	0.000285	Ε	0.00028	0.000512
	1,3-Butadiene	0.0000391	Ε	3.9E-05	7.03E-05
50-00-0	Formaldehyde	0.00118	E	0.00118	0.00212
	Acetaldehyde	0.000767	Е	0.00077	0.001378
	Acrolein	0.0000925	Ε	9.2E-05	0.000166
91-20-3	Naphthalene	0.0000848	Ε	8.5E-05	0.000152

Burning diesel fuel:

Total HAPs 0.00378 0.006811

lb/hour TPY

#### **Donna Toler**

From: Jason Swann [jason.swann@boothenergy.com]

**it:** Thursday, February 23, 2017 8:14 AM

Donna Toler

Subject: RE: Rock Crusher and Coal Screening Plants

Here is the specs on the COAL crusher engine. It is the 3-53 series Detroit Engine I have highlighted... Please disregard what Rick had written before and lets go with this information here... I also answered it in email form (written in red) down below this screenshot but had one question about what you were asking me on the year manufactured, was that the engine or the crusher you wanted the year on?? Be sure to scroll down and see the body of the email.... Thanks!



#### Detroit Diesel 3-53 key specs

#### Arrangement

3-53 - 3 Gyl In-Line, natural aspiration 3-53T - 3 Gyl In-Line, turbacharged

#### Displacement

3-53N and 3-53T - 2.6 liter, 159 CID

Bore - 3.875 in, 98.425 mm Stroke - 4.50 in, 114.30 mm

#### Compression ratio:

#### Power 3-53 101 hp. 75 kW @ 2800 rpm

#### 3-53T

131 hp. 98 kW @ 2500 rpm

#### Torque

3 - 53

205 lb ft. 278 Nm @ 1550 rpm

#### 3-53T

312 lb.ft, 423 Nm. @ 1600 rpm

#### Dimensions approx:

pumps, blowers

3-53N

length 838 mm, 33 in width 686 mm, 27 in height 889 mm, 35 in

3-53T

length 838 mm, 33 in width 737 mm, 29 in height 1016 mm, 40 in

#### Weight opprox:

3-53N 438 kg, 964 lb 3-53T 454 kg, 999 lb

### Detroit Diesel 3-53 essential bolt tightening torques

#### Main Bearing Bolts (9/16 NC)

step 1 = 60 lb.ft, 80 Nm step 2 = 130 lb.ft, 177 Nm

#### Connecting Rad Bolts

carlier type had 5/16 in bolts 24 to 28, lb.ft, 33 to 38 Nm.

ictor type has 3/8 in boits 40 to 45, lb ft, 54 to 61 Nm

#### Cylinder heed Bolts (5/8 NC

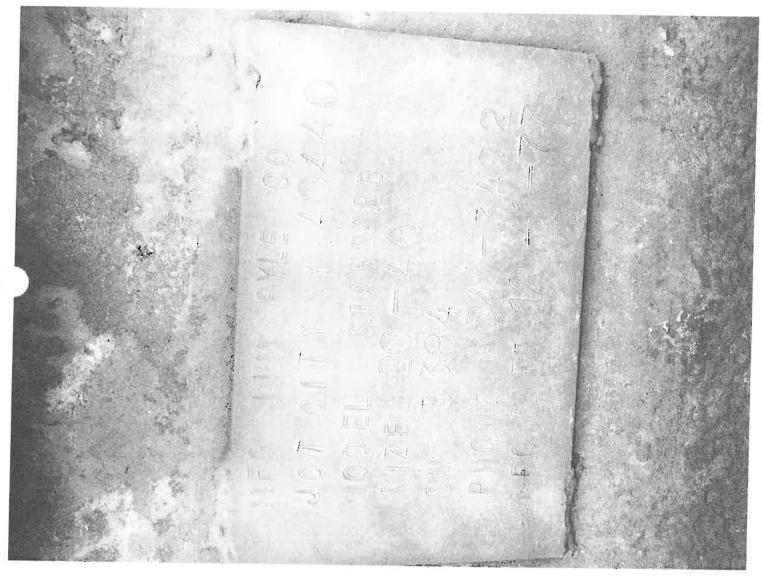
step 1 = 60 lb.ft, 80 Nm

step 2 = 110 ib ft, 150 Nim

stap 3 = 180 lb.ft, 240 Nm



Dussels 3 te Masser Machine Machine



# POWERSCREEN®

enufactured By rex GB Ltd alisland Road, Dungannon, Co. Tyrone

AR MANUFAL DE 26,900 KGS

~PID00129TDGF81029~

2 Deck Incline Screen

Specification - Rev 3. 06/06/2011









Specification - Rev 3. 06/06/2011

#### **Specification**

		14ft Hopper (with grid) wheel	14ft Hopper (with grid) track
Total weight		24,700kg (54,454lbs)	26,900kg (59,304lbs)
Transport	Length	16.81m (55' 2")	16.53m (54' 3")
	Width	3.0m (9' 10")	3.0m (9' 10")
	Height	3.6m (11' 10")	3.4m (11' 3")
Working	Length	17.22m (56' 6")	17.22m (56' 6")
	Width	17.32m (56' 10")	17.32m (56' 10")
	Height	6.21m (20' 4")	5.82m (19' 1")
Screenunit		4.8m x 1.5m (16' x 5')	4.8m x 1.5m (16' x 5')
Powerunit		Diesel / Hydraulic	Diesel / Hydraulic
Plant Colour		RAL 5021	RAL 5021

#### **Features & Benefits**

- High capacity up to 500 tph (depending on feed size, mesh size & material type)
- Maximum feed size 150mm
- Engine protection shutdown system
- Powerunit featuring a transverse engine arrangement to aid access & serviceability
- Heavy duty single shaft incline screenbox with adjustable stroke, angle & speed
- Hydraulic screen tensioning
- Screen mesh access system for quicker mesh changes
- Maximum mobility with heavy duty, low ground pressure crawler tracks
- Removable heavy duty pendant remote control system
- Quick set up time
- High performance hydraulic system cast iron pumps & motors complete with hydraulic cooler
- Low profile double deck vibrating grid option with radio remote control tipping grid rams, angle adjustable & fully riveted construction
- Hydraulically folding conveyors for transport
- Fines conveyor drop down facility to aid bottom deck mesh access

#### **Applications**

Aggregate	Recycling	Mining
<ul><li>Sand &amp; gravel</li></ul>	<ul><li>Top soil</li></ul>	<ul> <li>Processed ores</li> </ul>
<ul> <li>Blasted rock</li> </ul>	<ul><li>C&amp;D waste</li></ul>	<ul> <li>Processed minerals</li> </ul>
River rock	<ul> <li>Composted materials</li> </ul>	
	<ul> <li>Wood by-products</li> </ul>	
	<ul> <li>Overburden</li> </ul>	
	Foundry waste	

**Abbreviations:** 

T=Track, W=Wheel, Std= Standard, Hyd= Hydraulic, W/O= Without, C/W= Complete with EXT= Extended, DDVG= Double deck vibrating grid, Inc= Including, Aux= Auxiliary, Conv= Conveyor

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Specification - Rev 3, 06/06/2011

#### **Hopper & Grid**

Target area: 4.85m (15' 10") long x 1.85m (6') wide

Grid aperture: 102mm (4")

Hopper capacity: 7.5m3 (9.8 cu. yd.)

Adjustable angle tipping grid with integral loading

and wing plates

Feed in height: 3.65m (11' 11") (side) Feed in height: 3.33m (10' 11") (rear)

#### **Feed Conveyor**

1050mm (42") wide feed conveyor with direct drive system & hydraulic variable speed control 4.09m (13' 5") drum centres 320mm (13") drum diameter (drive) 350mm (14") drum diameter (tail)

#### **Main Conveyor**

1050mm (42") 3 ply plain belt 10.17m (33' 4") drum centres 286mm (11") drum diameter (drive) 270mm (8") drum diameter (tail)

Hydraulically adjustable conveyor, fully skirted & sealed

Variable speed control Angle adjustment: 23° - 27°

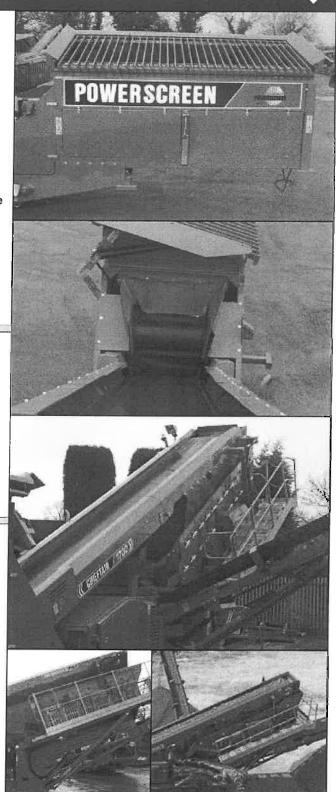
#### **Screenbox**

4.8m x 1.5m (16' x 5') 2 deck incline screen Highly aggressive screen drive Grease filled 2 bearing screenbox

4.8m x 1.5m (16' x 5') top deck 4.3m x 1.5m (14' x 5') bottom deck

4 of media sections (side tension) top deck 2 of media sections (end tension) bottom deck

Hydraulic screen angle adjustment 20° - 32°
Hydraulic screen tensioning on bottom deck
Galvanised walkways on both sides of screen
Quick release wedge screen tensioning system for side tensioned section





Specification - Rev 3, 06/06/2011

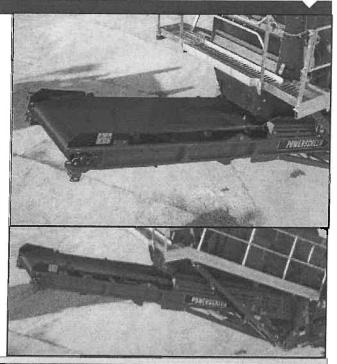
#### Finesize - Tail Conveyor

1200mm (48") wide 3 ply plain belt 6.87m (22' 6") drum centres 286mm (11") drum diameter (drive) 270mm (10") drum diameter (tail)

4.23m (13' 10") stockpile height (to drum centre) T 113m<sup>3</sup> (148 cu. yd.) stockpile volume

4.59m (15' 1") stockpile height (to drum centre) W 144m<sup>3</sup> (188 cu. yd.) stockpile volume

Variable speed Hydraulically folding Chevron belt as option Angle adjustment: 0° - 25°



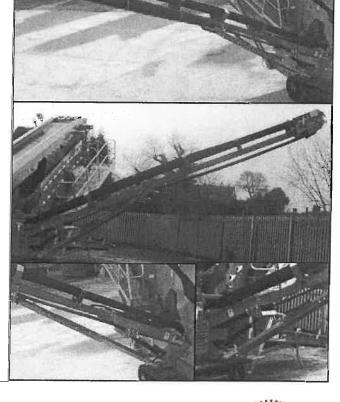
#### Midsize & Oversize - Side Conveyors

650mm (26") wide 3 ply chevron belt 9.67m (31' 8") drum centres 286mm (11") drum diameter (drive) 270mm (10") drum diameter (tail)

4.72m (15' 6") stockpile height (to drum centre) T 157m<sup>3</sup> (205 cu. yd.) stockpile volume

5.08m (16' 8") stockpile height (to drum centre) W 195m³ (255 cu. yd.) stockpile volume

Variable speed control Hydraulically folding Fixed angle: 25°





Specification - Rev 3, 06/06/2011

#### **Powerunit & Hydraulics**

#### **Engine:**

CAT 4.4 (TIER 3) 4 cylinder diesel

#### Performance:

83 kW (111.3hp) @ 2200rpm

#### **Tank Capacities:**

Fuel:

336 L (88 US Gal)

Hydraulic Oil: 576 L (152 US Gal)

#### **Pumps:**

Flywheel pump: Cast iron tandem pump 33cc/rev

PTO pump A:

Cast iron tandem pump 23cc/rev

PTO pump B:

Cast iron tandem pump 14cc/rev

#### **Motors:**

Belt feeder:

160cc/rev

Main conveyor:

Cast iron 630cc/rev

Tail conveyor:

Cast iron 500cc/rev

Side conveyors:

Cast iron 400cc/rev

Screen motor:

Cast iron 59cc/rev

#### Optional Diesel engine:

Deutz TCD2013 L04 2V

125 kW (168hp) @ 2200rpm

#### **Crawler Track Data**

Track width:

400mm

Output torque:

33,804 Nm

Gradability degrees:

24.8°

Gearbox ratio:

1:123

Hydraulic motor:

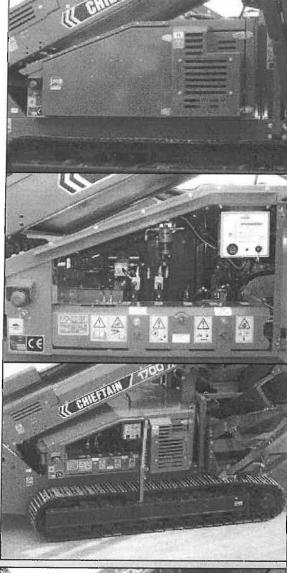
85cc/rev

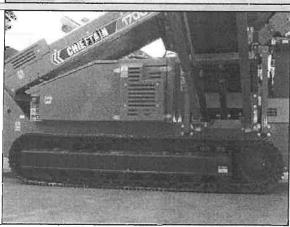
Approximate speed:

0.7kph (0.43mph)

Total flow per track:

72.6 Lpm







## Powerscreen® Chieftain 1700 Options

Specification - Rev 3, 06/06/2011

#### **Vibrating Grid**

Target area: 3.05m (10') long x 2.14m (7') wide

Double deck option: Bottom deck screen size: 2 of 1.9m (6' 3") x 1.5m (4' 11")

Working angle: 10° - 20° (hydraulic adjustable)

Tip angle:

45° max

Motor:

59cc/rev

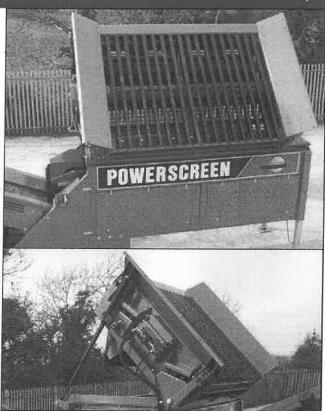
Circuit:

Coupled to main conveyor circuit

Feed in height: 3.73m (12' 2") (side) Feed in height: 3.93m (12' 10") (rear)

Transport height: 3.98m (13') Track Transport height: 3.98m (13') Wheel

Total weight: 4,000kg (8,818lbs)



#### **Dual Power**

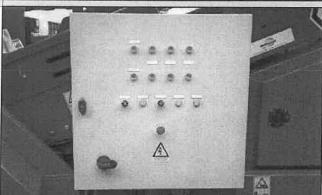
Dual power system:

2 of electric motors; 37 kW (50hp) & 30 kW (40hp)

Diesel engine

Integrated control system

This controls either diesel-hydraulic or electric-hydraulic functions



#### **Other Options**

Different coloured machine

**Optional engine** 

Auto lubrication system

Quick release wedge tensioning for middle deck

Electric wheel version

Anti roll-back

Radio controlled tracking

Roll-in bogie

Hydraulic jacking legs

Auxiliary conveyor attached for transport

Washing version



Specification - Rev 3, 06/06/2011

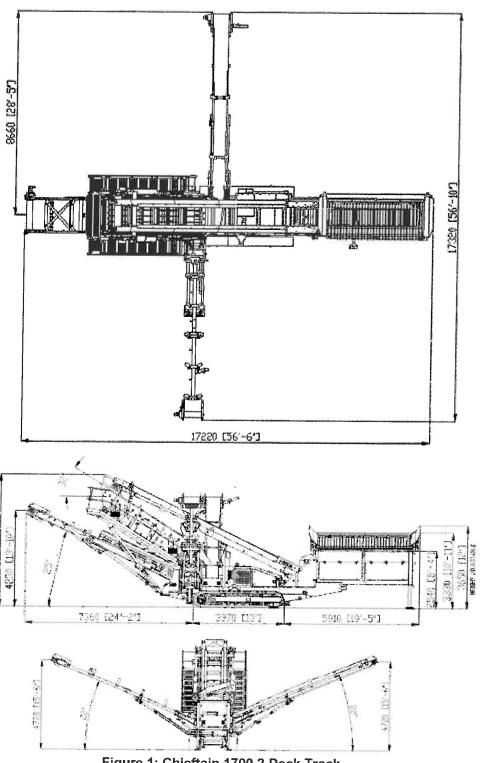
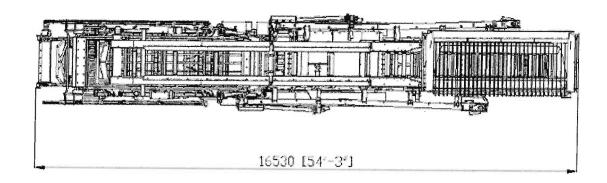
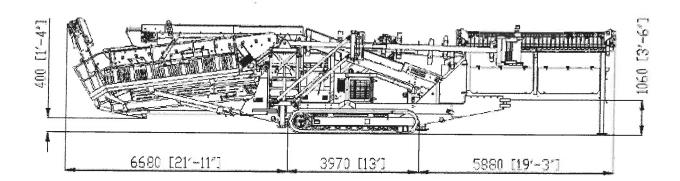


Figure 1: Chieftain 1700 2 Deck Track
Working Position







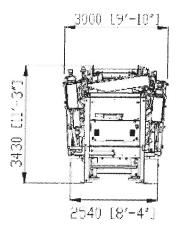
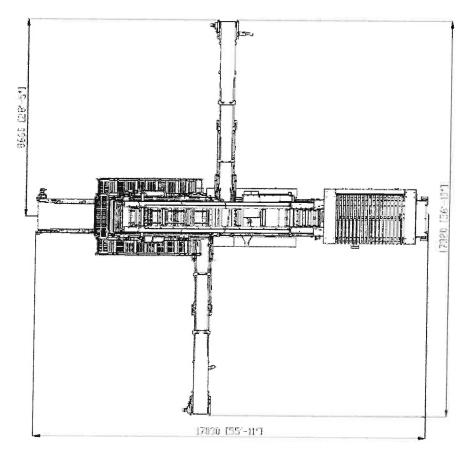


Figure 2: Chieftain 1700 2 Deck Track
Transport Position





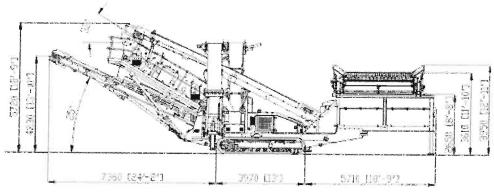
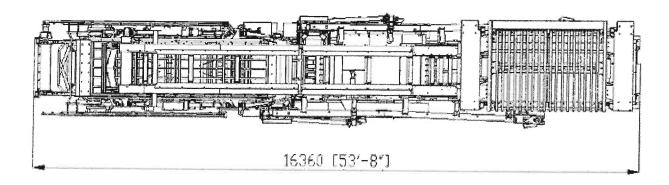
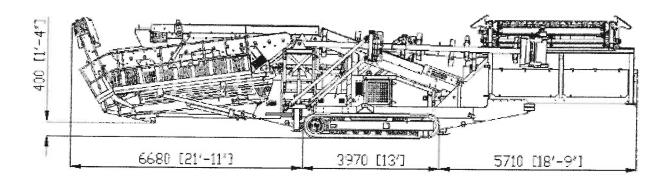




Figure 3: Chieftain 1700 2 Deck Track Double Deck Vibrating Grid Working Position







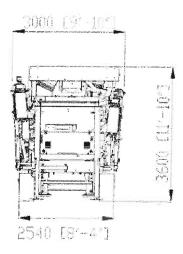
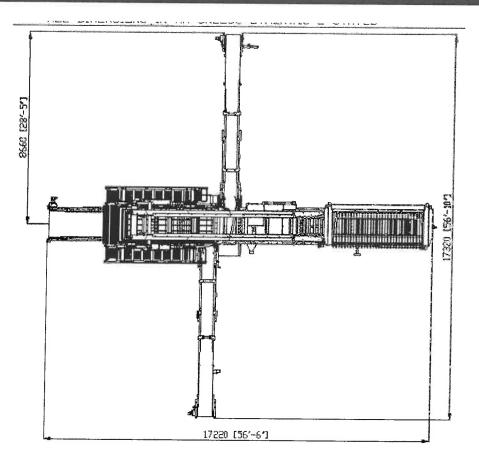
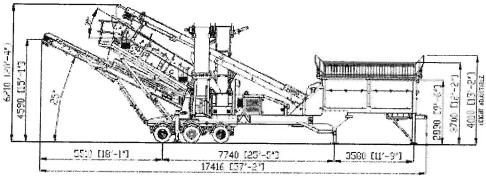


Figure 4: Chieftain 1700 2 Deck Track
Double Deck Vibrating Grid
Transport Position



Specification - Rev 3, 06/06/2011





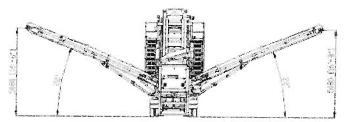
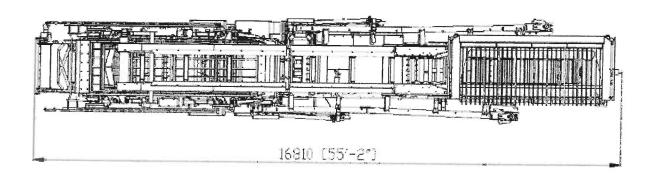
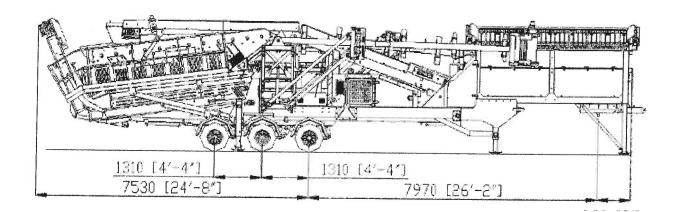


Figure 5: Chieftain 1700 2 Deck Wheel Working Position







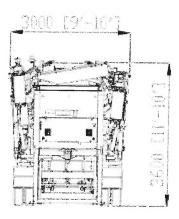
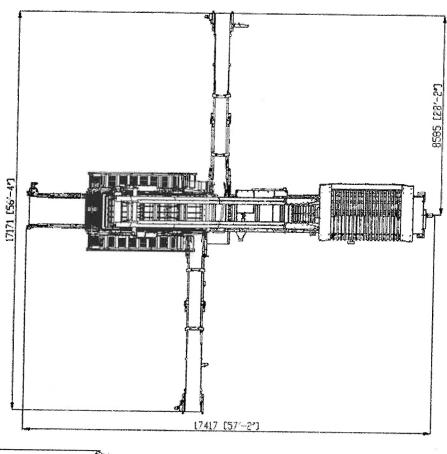


Figure 6: Chieftain 1700 2 Deck Wheel Transport Position





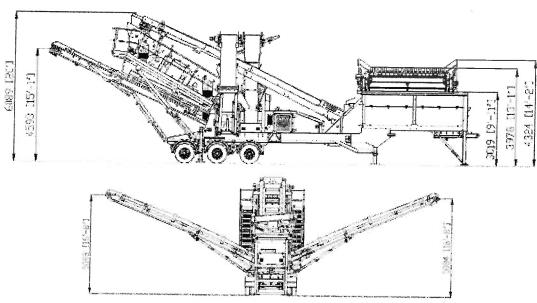
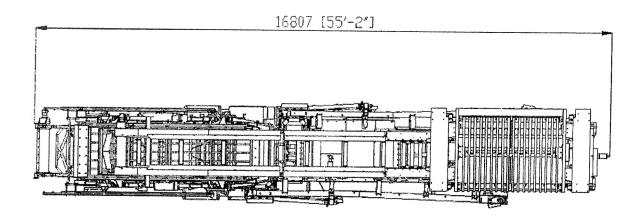
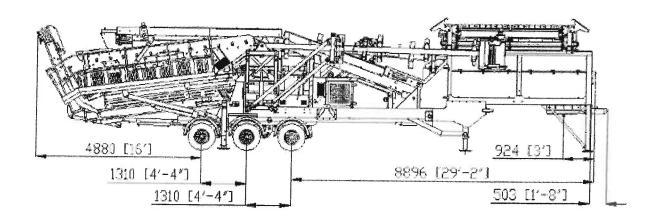


Figure 7: Chieftain 1700 2 Deck Wheel Double Deck Vibrating Grid Working Position







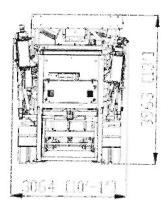


Figure 8: Chieftain 1700 2 Deck Wheel Double Deck Vibrating Grid Transport Position



## Powerscreen<sup>®</sup> Chieftain 1700



Specification - Rev 3. 06/06/2011

#### Powerscreen equipment complies with CE requirements.

Please consult Powerscreen if you have any other specific requirements in respect of guarding, noise or vibration levels, dust emissions, or any other factors relevant to health and safety measures or environmental protection needs. On receipt of specific requests, we will endeavour to ascertain the need for additional equipment and, if appropriate, quote extra to contract prices.

All reasonable steps have been taken to ensure the accuracy of this publication, however due to a policy of continual product development we reserve the right to change specifications without notice.

It is the importers' responsibility to check that all equipment supplied complies with local legislation regulatory requirements.

Plant performance figures given in this brochure are for illustration purposes only and will vary depending upon various factors, including feed material gradings and characteristics. Information relating to capacity or performance contained within this publication is not intended to be, nor will be, legally binding.

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